U.S. Department of Justice
Drug Enforcement Administration
Office of Forensic Sciences

The U.S. Attorney General has determined that the publication of this periodical is necessary in the transaction of the public business required by the Department of Justice. Information, instruction, and disclaimers are published in the January issues.

– AUGUST 2012 –

SELECTED REFERENCES

[The Selected References section is a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. Abbreviated mailing address information duplicates that which is provided by the abstracting service. Patents and Proceedings are reported only by their *Chemical Abstracts* citation number. For full text copies of any of the articles listed, you may email the DEA Library at dea.library@usdoj.gov.]

1. Moosmann B, Kneisel S, Girreser U, Brecht V, Westphal F, Auwaerter V. **Separation and structural characterization of the synthetic cannabinoids JWH-412 and 1-[(5-fluoropentyl)-1H-indol-3yl]-(4-methylnaphthalen-1-yl)methanone using GC-MS, NMR analysis and a flash chromatography system.** Forensic Science International 2012, 220(1-3), e17-e22. [Editor's Notes: Presents title study. Contact: Institute of Forensic Medicine, Department of Forensic Toxicology, University Medical Center Freiburg, Freiburg 79104, Germany.]

2. Rittgen J, Puetz M, Zimmermann R. **Identification of fentanyl derivatives at trace levels with nonaqueous capillary electrophoresis-electrospray-tandem mass spectrometry (MS^n, n = 2, 3): Analytical method and forensic applications.** [Editor's Notes: A nonaqueous capillary electrophoresis (NACE)-ESI-MS^n procedure was developed for the seperation and identification of six fentanyl derivatives including fentanyl, cis- and trans-methylfentanyl, sufentanil, alfentanil, and carfentanil. Their fragmentation pattern in MS^n experiments were investigated as well as the influence of the sheath-liquid mixtures and the influence of the inside diameter of the fused silica capillary on the peak shape and the signal to noise ratio. Method validation included

determination of the detection limits (about 1-2 nmol/L) and the repeatability of migration time (at most 0.07% relative standard deviation). The NACE-MS procedure was successfully applied for the analysis of real samples from seizures in illegal fentanyl laboratories. Contact: Bundeskriminalamt - Federal Criminal Police Office, Forensic Science Institute, Wiesbaden, Germany.]

3. Sekula K, Zuba D, Stanaszek R. **Identification of naphthoylindoles acting on cannabinoid receptors based on their fragmentation patterns under ESI-QTOFMS.** Journal of Mass Spectrometry 2012;47(5):632-643. [Editor's Notes: The mass spectral behavior of 12 synthetic cannabinoids from the naphthoylindole family under electrospray ionization (ESI) was investigated. LC-QTOFMS experiments were performed in 3 modes (low fragmentor voltage, high fragmentor voltage with/without collision energy), and they enabled the identification of protonated molecules and main ions. A general fragmentation pattern under this ionization method was proposed, and mechanisms of ion formation were discussed. The developed procedure allowed the determination of substituent groups of the core naphthoylindole structure and distinction between positional isomers. The obtained results were used for the prediction of the ESI-MS spectra for many naphthoylindoles with a high affinity to cannabinoid receptors. Similarities and differences between ESI-MS and electron impact-MS spectra of naphthoylindoles were discussed. Contact: Department of Forensic Toxicology, Institute of Forensic Research, Krakow, Poland.]

Additional References of Possible Interest:

1. Baron M, Elie M, Elie L. **An analysis of legal highs-do they contain what it says on the tin?** Drug Testing and Analysis 2011;3(9):576-581. [Editor's Notes: Presents title study. Contact: School of Natural & Applied Sciences, Faculty of Health & Life Sciences, University of Lincoln, United Kingdom.]

2. Chan KW, Tan GH, Wong RC. **ICP-MS method validation for the analysis of trace elements in illicit heroin.** Analytical Letters 2012;45(9):1122-1132. [Editor's Notes: The analysis of the trace elements present in the street doses of heroin has been undertaken to estimate the elemental composition and to cluster the case samples. Inductively coupled plasma-mass spectrometry (ICP-MS) was optimized to quantify 18 trace elements simultaneously. The capability of the optimized method was assessed by analysis of forty case samples. Contact: Department of Chemistry, University of Malaya, Kuala Lumpur, Malaysia.]

3. Salomone A, Gerace E, D'Urso F, Di Corcia D, Vincenti M. **Simultaneous analysis of several synthetic cannabinoids, THC, CBD and CBN, in hair by ultra-high performance liquid chromatography tandem mass spectrometry. Method validation and application to real samples.** Journal of Mass Spectrometry 2012; 47(5):604-610. [Editor's Notes: Presents title study. Contact: Centro Regionale Antidoping "A. Bertinaria", Turin, Italy.]

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THE DEA STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The schedule for the DEA State and Local Forensic Chemists Seminar is as follows:

November 5 - 9, 2012
March 11 - 15, 2013
June 10 - 14, 2013
September 16 - 20, 2013
November 4 - 8, 2013

The school is open only to forensic chemists working for law enforcement agencies. It is intended for chemists who have completed their agency's internal training program and have also been working on the bench for at least one year. There is no tuition charge. The course is held at the Hyatt Place Dulles North Hotel in Sterling, Virginia (near the Washington/Dulles International Airport). A copy of the application form is reproduced on the last page of this issue of *Microgram Bulletin*. Completed applications should be mailed to the Special Testing and Research Laboratory at 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, email DEA-Forensic.Chemist.Seminar@usdoj.gov.

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DEA State and Local Forensic Chemist Seminar Application

Name: (PRINT NAME EXACTLY AS IT IS TO APPEAR ON CERTIFICATE)	Title:

Employer:

Your Office Mailing Address (include city, state, and zipcode):	Length of Service:

Business Telephone: ( ) -	Business Fax: ( ) -	Date of Application:

Email Address:

Education

College or University	Degree	Major

Please Check Which Techniques or Equipment Are Used in Your Laboratory

	Color Tests		UV
	Column Chromatography		IR
	Microcrystal Tests		CE
	Thin Layer Chromatography		GC/MS
	GC		Other (please specify)
	HPLC		Other (please specify)

Indicate Analytical Problem(s) Nominee Would Like to Have Covered:

Choice of Seminar Dates:
1st Choice: 2nd Choice:

Laboratory Chief/Director:

Printed Name:_____ Signature: _____

Title: _____ Date: _____

Phone: _____